

as a result of his observations, that the injection of distilled water by the subcutaneous route can cause fever.⁶ In the paper referred to it is clear that neglect to make hourly observation after injection is responsible for his statement.

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The Blood Volume of Mammals as Determined by Experiments upon Rabbits, Guinea-pigs, and Mice, and its Relationship to the Body Weight and to the Surface Area expressed in a Formula.

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(Abstract.)

The blood volume of animals has for many years been the subject of numerous investigations. This is but natural, considering its great importance for the study of disease. As, however, the results obtained are very discordant, we have determined the blood volumes of rabbits, guinea-pigs, and mice by Welcker's method, by washing out the circulatory system, and by following the percentage fall of hæmoglobin after bleeding.

Our experiments have given the following results:—

(1) The blood volume of living mammals can be determined very accurately by bleeding the animal (about 20 per cent. of its original blood volume) and determining the percentage fall of hæmoglobin at the moment when equilibrium is reached. This method gives results remarkably concordant with those obtained by washing out the circulatory system. In employing this method it is absolutely essential that the animals should not have been bled before.

(2) In normal healthy mammals (rabbit, guinea-pig, and mouse) the blood volume is satisfactorily expressed by the following formula, $B = W^{\frac{2}{3}}/k$, where B is the blood volume in cubic centimetres, W the weight of the individual in grammes, and k a constant to be ascertained for each particular species of animal. This formula indicates that the smaller animals of any given species, which have a relatively greater body surface than heavier ones, have also a relatively greater blood volume. That is to say, that the blood volume can be expressed as a function of the surface area. It is therefore misleading to express the blood volume as percentage of the body weight, as has hitherto been invariably done.

(3) The constant k , by means of which the blood volume in cubic centimetres can be calculated from our formula $B = W^{\frac{2}{3}}/k$ when the weight of the animal in grammes is known, is approximately, for—

Rabbit	1.58
Guinea-pig..... ..	3.30
Mouse.....	6.70

